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10/770,873	02/02/2004	Alex Ka Tim Poon	PA0559-US / 11269.63	1051

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EXAMINER	
SMYTH, ANDREW P	
ART UNIT	PAPER NUMBER
2881	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/770,873	POON ET AL.	
	Examiner	Art Unit	
	ANDREW SMYTH	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-74* is/are pending in the application.

4a) Of the above claim(s) *44,45 and 68* is/are withdrawn from consideration.

5)☒ Claim(s) *1-22,41-43,46-58,73 and 74* is/are allowed.

6)☒ Claim(s) *23-40,53-67 and 69-72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02/02/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1, 23-37, and 59 were amended by the applicant.

2. Claims 44-45, and 68 were canceled by the applicant.

3. Claims 73-74 are new claims added by the applicant.

Response to Arguments

1. Applicant's arguments filed 11/19/2007 have been fully considered but they are not all persuasive. Please see the claim rejections below.

Allowable Subject Matter

1. Claims 1-22, 41-43, 46-58, and 73-74 are allowed.

2. The following is a statement of reasons for the indication of allowable subject matter: "A force provider comprising: a provider housing that defines a piston chamber, the provider housing including a first beam aperture, a first cylinder aperture that is in fluid communication with a fluid at a first pressure and a spaced apart second cylinder aperture that is in fluid communication with a fluid that is approximately at the first pressure; and a piston assembly including a piston positioned in the piston chamber, and a first beam extending through the first beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston

side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first cylinder aperture and the second piston side is closer than the first piston side to the first cylinder aperture and the second cylinder aperture, and wherein at a second piston region of the piston path, the piston is positioned between the cylinder apertures."

And also: "A force provider comprising: a provider housing that defines a piston chamber; and a piston assembly including a piston and a first intermediate piston positioned within the piston chamber, the piston moving relative to the provider housing along a piston path that includes a first piston region and a second piston region, wherein the first intermediate piston moves concurrently with the piston when the piston is positioned in at least a portion of the first piston region and wherein the piston moves independently of the first intermediate piston when the piston is positioned in the second piston region so as to change the distance between the piston and the first intermediate piston."

And also: "A force provider comprising: a provider housing that defines a piston chamber; and a piston assembly including a piston and a first intermediate piston positioned within the piston chamber, a first bar that is secured to the piston, the first bar extending through the first intermediate piston and through the provider housing, and a first intermediate bar that is secured to the first intermediate piston, the first intermediate bar extending through the provider housing, the piston moving relative to the provider housing along a piston path that includes a first piston region and a second piston

region, wherein the first intermediate piston moves concurrently with the piston when the piston is positioned in at least a portion of the first piston region and wherein the piston moves relative to the first intermediate piston when the piston is positioned in the second piston region."

The "force provider" configuration was not found in a prior art search. The search failed to show or suggest the prior use of: "A force provider comprising: a provider housing that defines a piston chamber, the provider housing including a first beam aperture, a first cylinder aperture that is in fluid communication with a fluid at a first pressure and a spaced apart second cylinder aperture that is in fluid communication with a fluid that is approximately at the first pressure; and a piston assembly including a piston positioned in the piston chamber, and a first beam extending through the first beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first cylinder aperture and the second piston side is closer than the first piston side to the first cylinder aperture and the second cylinder aperture, and wherein at a second piston region of the piston path, the piston is positioned between the cylinder apertures."

Or: "A force provider comprising: a provider housing that defines a piston chamber; and a piston assembly including a piston and a first intermediate piston positioned within the piston chamber, the piston moving relative to the provider housing

along a piston path that includes a first piston region and a second piston region, wherein the first intermediate piston moves concurrently with the piston when the piston is positioned in at least a portion of the first piston region and wherein the piston moves independently of the first intermediate piston when the piston is positioned in the second piston region so as to change the distance between the piston and the first intermediate piston."

Or: "A force provider comprising: a provider housing that defines a piston chamber; and a piston assembly including a piston and a first intermediate piston positioned within the piston chamber, a first bar that is secured to the piston, the first bar extending through the first intermediate piston and through the provider housing, and a first intermediate bar that is secured to the first intermediate piston, the first intermediate bar extending through the provider housing, the piston moving relative to the provider housing along a piston path that includes a first piston region and a second piston region, wherein the first intermediate piston moves concurrently with the piston when the piston is positioned in at least a portion of the first piston region and wherein the piston moves relative to the first intermediate piston when the piston is positioned in the second piston region."

2. Dependent claims 2-22 are allowable due to dependency upon allowable independent claim 1.

3. Dependent claims 42-43 and 46-58 are allowable due to dependency upon allowable independent claim 42.

4. Dependent claim 74 is allowable due to dependency upon allowable independent claim 73.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 23-24, 37-40, and 59-60, and 71-72 are rejected under 35U.S.C. 102(b) as being anticipated by Yuan et al. (US 6,987,558).

Regarding applicant's claim 23, Yuan (figure 4) discloses: A combination comprising: a mover that moves a stage along a stage path that includes a first stage region and a second stage region; and a force provider assembly including (column 5, lines 18-20) (column 5, lines 24-33) a pneumatic (column 5, lines 14-17) force provider coupled to the stage (201), the force provider providing an acceleration/deceleration force on the stage when the stage is in the first stage region and approximately no force on the stage when the stage is in the second stage region (column 5, lines 20-24); (Note: 204 provides an acceleration/deceleration force on the stage against the force of gravity).

Regarding applicant's claim 24, Yuan discloses: the stage path includes a third stage region and the force provider provides an acceleration/deceleration force on the stage when the stage is in the third stage region (column 5, lines 20-24).

Regarding applicant's claim 37, Yuan (figure 1) discloses: a stage assembly (66) for moving a device (68), the stage assembly comprising: a stage that retains the device; and (column 5, lines 24-33) a combination of claim 23 coupled to the stage (column 5, lines 18-20).

Regarding applicant's claim 38, Yuan discloses: an exposure apparatus (21) including the stage assembly (100).

Regarding applicant's claim 39, Yuan discloses: an object (68) on which an image has been formed by the exposure apparatus (21).

Regarding applicant's claim 40, Yuan discloses: a semiconductor wafer (68) on which an image has been formed by the exposure apparatus (21).

Regarding applicant's claim 59, Yuan discloses: a method for accelerating and decelerating a stage (abstract), the method comprising the steps of: coupling a mover to the stage that moves the stage along a stage path that includes a first stage region and a second stage region; and coupling a pneumatic force provider (column 5, lines 13-17) to the stage (201), the force provider providing an acceleration/deceleration force on the stage along the stage path when the stage is in the first stage region and approximately no force on the stage when the stage is in the second stage region (column 4, lines 38-48).

Regarding applicant's claim 60, Yuan discloses: a method wherein the stage path includes a third stage region and the force provider provides an acceleration/deceleration force on the stage when the stage is in the third stage region (column 4, lines 38-48).

Regarding applicant's claim 71, Yuan discloses: a method for making an exposure apparatus (21) comprising the steps of providing an illumination source (84), providing a stage (201), and accelerating and decelerating the stage (abstract).

Regarding applicant's claim 72, Yuan discloses: a method of making a wafer (68) including the steps of providing a substrate (column 12, lines 11-27) and forming an image on the substrate with the exposure apparatus (21).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 25-36, 53-58, 61-67, and 69-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skoyles (US 3,389,939) and in light of Yuan et al. (US 6,987,558).

Regarding applicant's claim 25, Yuan discloses the combination/ force provider assembly elements of claim 23, that claim 25 depends upon, see above.

However, Yuan lacks: the force provider comprises (i) a provider housing that defines a piston chamber, the provider housing including a first beam aperture, a first cylinder aperture that is in fluid communication with a fluid at a first pressure and a spaced apart second cylinder aperture that is in fluid communication with a fluid at approximately the first pressure; and (ii) a piston assembly including a piston positioned in the piston chamber, and a first beam extending through the first beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first cylinder aperture and at a second piston region of the piston path, the piston is positioned between the cylinder apertures.

Yet Skoyles (figure 3) discloses: a force provider comprising: a provider housing that defines a piston chamber (15), the provider housing including a first beam aperture (31 into 15), a first cylinder aperture (bottom cylinder aperture) that is in fluid communication with a fluid at a first pressure and a spaced apart second cylinder aperture (upper aperture) that is in fluid communication with a fluid that is approximately at the first pressure; and a piston assembly including a piston (30) positioned in the piston chamber, and a first beam (31) extending through the first beam aperture, the piston including a first piston side and a second piston side, the first beam being

secured to the first piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first cylinder aperture and at a second piston region of the piston path, the piston is positioned between the cylinder apertures.

Regarding applicant's claim 26, Skoyles (figure 5) discloses: wherein the provider housing includes a second beam aperture (left side of piston, 30), the piston assembly includes a second beam (mirror image beam of 31, on left side) extending through the second beam aperture, the second beam being secured to the second piston side.

Regarding applicant's claim 27, Skoyles (figure 16) discloses: wherein at the first piston region (right side of 30), the pressure of the fluid on the first piston side is greater than the pressure of the fluid on the second piston side (left side of 30); (when system is not in equilibrium either the left or right side can have greater or lesser pressure; see also column 3, lines 74 to column 4, line 2).

Regarding applicant's claim 28, Skoyles (figure 3) discloses: at the second piston region (right side of 30), the pressure of the fluid on the first piston side (right side of 30), is approximately equal to the pressure of the fluid on the second piston side (left side of 30), (when system is in equilibrium the left and right side have approximately equal pressure; see also column 3, lines 74 to column 4, line 2).

Regarding applicant's claim 29, Skoyles (figure 5) discloses: wherein at a third piston region of the piston path, the pressure of the fluid on the second piston side (right side of 30) is greater than the pressure of the fluid on the first piston side (when system

is not in equilibrium either the left or right side can have greater or lesser pressure; see also column 3, lines 74 to column 4, line 2).

Regarding applicant's claim 30, Skoyles (figure 5) discloses: wherein in the third piston region, the piston (30) is positioned between the second cylinder aperture (top aperture in cylinder, 10) and a second beam aperture (left beam's aperture) in the provider housing.

Regarding applicant's claim 31, Skoyles (figure 3) discloses: a wail gap exists between the piston and the provider housing (note gap between 30 and 15) so that the piston moves easily relative to the provider housing.

Regarding applicant's claim 32, Skoyles (figure 10) discloses: a fluid source (66) that directs a fluid into the piston chamber near the first piston region (top).

Regarding applicant's claim 33, Skoyles (figure 10) discloses: the amount of fluid directed into the piston chamber by the fluid source (66) is approximately equal to the amount of fluid that escapes between the piston and the provider housing and between the first beam and the provider housing (column 10, lines 12-24).

Regarding applicant's claim 34, Skoyles (figure 10) discloses: the fluid source (66) directs fluid into the piston chamber so that the pressure on the first piston side does not decrease when the piston is moving in a first direction in the first piston region (column 10, lines 25-34).

Regarding applicant's claim 35, Skoyles (figure 6) discloses: an intermediate piston (39) positioned within the piston chamber (41, 15), the intermediate piston moving concurrently with the piston when the piston (30) is positioned in the first piston

region and wherein the piston moves relative to the intermediate piston when the piston is positioned in the second piston region.

Regarding applicant's claim 36, Skoyles (figure 7) discloses: the piston (50) is not fixedly coupled to the intermediate piston (48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the force provider assembly elements of Yuan with the pressure regions, fluid flow, and piston configuration elements as taught by Skoyles to transfer force from the force provider to the object to be moved, the stage assembly, for finite position control of the stage assembly and wafer/ object carried by the stage.

Regarding applicant's claim 61, Yuan discloses the elements of claim 59 that claim 61 depends upon, see above.

However, Yuan lacks The method of claim 59 wherein the step of coupling includes the step of providing a force provider that comprises (i) a provider housing that defines a piston chamber, the provider housing including a first beam aperture, a first cylinder aperture that is in fluid communication with a fluid at a first pressure and a spaced apart second cylinder aperture that is in fluid communication with a fluid at approximately the first pressure; and (ii) a piston assembly including a piston positioned in the piston chamber, and a first beam extending through the first beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between

the first beam aperture and the first cylinder aperture and at a second piston region of the piston path, the piston is positioned between the cylinder apertures.

Skoyles, (figure 5) teaches: The method of claim 59 wherein the step of coupling includes the step of providing a force provider (31) that comprises (i) a provider housing that defines a piston chamber, the provider housing including a first beam aperture (31 into the piston chamber), a first cylinder aperture (lower right aperture) that is in fluid communication with a fluid (20) at a first pressure and a spaced apart second cylinder aperture (upper left aperture) that is in fluid communication with a fluid at approximately the first pressure; and (ii) a piston assembly including a piston (30) positioned in the piston chamber, and a first beam (31) extending through the first beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first cylinder aperture and at a second piston region of the piston path, the piston is positioned between the cylinder apertures.

Regarding applicant's claim 62, Yuan discloses the elements of claim 59 that claim 62 depends upon, see above.

However, Yuan lacks: a method wherein the step of coupling includes the step of providing a force provider that comprises (i) a provider housing that defines a piston chamber, the provider housing including a first beam aperture, a second beam aperture, a first cylinder aperture that is in fluid communication with a fluid at a first pressure and a spaced apart second cylinder aperture that is in fluid communication with a fluid at

approximately the first pressure; and (ii) a piston assembly including a piston positioned in the piston chamber, a first beam extending through the first beam aperture and a second beam extending through the second beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston side and the second beam being secured to second piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first cylinder aperture and at a second piston region of the piston path, the piston is positioned between the cylinder apertures.

Skoyles, (figure 5) teaches: a method wherein the step of coupling includes the step of providing a force provider (31) that comprises (i) a provider housing that defines a piston chamber, the provider housing including a first beam aperture (right side), a second beam aperture (left side), a first cylinder aperture (lower right) that is in fluid communication with a fluid (20) at a first pressure and a spaced apart second cylinder aperture (upper left) that is in fluid communication with a fluid at approximately the first pressure; and (ii) a piston assembly including a piston (30) positioned in the piston chamber, a first beam (31 right) extending through the first beam aperture and a second beam (31 left) extending through the second beam aperture, the piston including a first piston side and a second piston side, the first beam being secured to the first piston side and the second beam being secured to second piston side, the piston moving relative to the provider housing along a piston path, wherein at a first piston region of the piston path, the piston is positioned between the first beam aperture and the first

cylinder aperture and at a second piston region of the piston path, the piston is positioned between the cylinder apertures.

Regarding applicant's claim 63, Yuan discloses the elements of previous claims that claim 63 depends upon, see above.

However, Yuan lacks: a method wherein at the first piston region, the pressure of the fluid on the first piston side is greater than the pressure of the fluid on the second piston side.

Skoyles, teaches: a method wherein at the first piston region, the pressure of the fluid on the first piston side is greater than the pressure of the fluid on the second piston side (when system is not in equilibrium either the left or right side can have greater or lesser pressure; see also column 3, lines 74 to column 4, line 2).

Regarding applicant's claim 64, Yuan discloses the elements of previous claims that claim 64 depends upon, see above.

However, Yuan lacks: a method wherein at the second piston region, the pressure of the fluid on the first piston side is equal to the pressure of the fluid on the second piston side.

Skoyles, teaches: a method wherein at the second piston region, the pressure of the fluid on the first piston side is equal to the pressure of the fluid on the second piston side (when system is in equilibrium the left and right side have approximately equal pressure; see also column 3, lines 74 to column 4, line 2).

Regarding applicant's claim 65, Yuan discloses the elements of previous claims that claim 65 depends upon, see above.

However, Yuan lacks: a method wherein at a third piston region of the piston path, the pressure of the fluid on the second piston side is greater than the pressure of the fluid on the first piston side.

Skoyles, teaches: a method of wherein at a third piston region of the piston path, the pressure of the fluid on the second piston side is greater than the pressure of the fluid on the first piston side (when system is not in equilibrium either the left or right side can have greater or lesser pressure; see also column 3, lines 74 to column 4, line 2).

Regarding applicant's claim 66, Yuan discloses the elements of previous claims that claim 66 depends upon, see above.

However, Yuan lacks: a method, wherein in the third piston region, the piston is positioned between the second cylinder aperture and the second beam aperture.

Skoyles, (figure 5) teaches: a method, wherein in the third piston region, the piston (30) is positioned between the second cylinder aperture (upper left) and the second beam aperture (left side for 31).

Regarding applicant's claim 67, Yuan discloses the elements of claim 59 that claim 62 depends upon, see above.

However, Yuan lacks: a method comprising the step of directing a fluid from a fluid source into the piston chamber near the first piston region.

Skoyles, (figure 5) teaches: a method comprising the step of directing a fluid from a fluid source (10) into the piston chamber near the first piston region (around 30).

Regarding applicant's claim 69, Yuan discloses the elements of claim 59 that claim 69 depends upon, see above.

However, Yuan lacks: a method wherein the step of coupling includes the step of providing a force provider that comprises (i) a provider housing that defines a piston chamber; and (ii) a piston assembly including a piston and a first intermediate piston positioned within the piston chamber, the piston moving relative to the provider housing along a piston path that includes a first piston region and a second piston region, wherein the first intermediate piston moves concurrently with the piston when the piston is positioned in at least a portion of the first piston region, and wherein the piston moves relative to the first intermediate piston when the piston is positioned in the second piston region.

Skoyles, (figure 6) teaches: a method wherein the step of coupling includes the step of providing a force provider (31) that comprises (i) a provider housing that defines a piston chamber; and (ii) a piston assembly including a piston (39) and a first intermediate piston (30) positioned within the piston chamber, the piston moving relative to the provider housing along a piston path that includes a first piston region and a second piston region, wherein the first intermediate piston moves concurrently (31) with the piston when the piston is positioned in at least a portion of the first piston region, and wherein the piston moves relative (31) to the first intermediate piston when the piston is positioned in the second piston region.

Regarding applicant's claim 70, Yuan discloses the elements of claim 59 that claim 69 depends upon, see above.

However, Yuan lacks: a method wherein the piston is not fixedly coupled to the first intermediate piston.

Skoyles, (figure 7) teaches: a method wherein the piston (50) is not fixedly coupled to the first intermediate piston (48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the fluidic / pneumatic force provider elements of Skoyles with the stage assembly, stage acceleration method/ control, and exposure apparatus elements as taught by Yuan to transfer force from the force provider to the object to be moved, the stage assembly, for finite position control of beam exposure positioning upon wafer/object upon the stage assembly to increase speed of processing and dexterity.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW SMYTH whose telephone number is (571)270-1746. The examiner can normally be reached on 9AM - 5:30PM; Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.S.

/Jack I. Berman/
Primary Examiner, Art Unit 2881